

REMARKS

Claims 1, 2, 6, 7, 11 and 12 have been amended. Claims 1-16 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Section 112, Second Paragraph Rejected:

The Office Action rejected claims 1, 2, 6, 7, 11 and 12 under 35 U.S.C. § 112, second paragraph as indefinite. Applicants respectfully traverse this rejection. However, in order to expedite prosecution, claims 1, 2, 6, 7, 11 and 12 have been amended to remove occurrences of the phrase “to be.”

Section 101 Rejection:

The Office Action rejected claim 16 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicants respectfully traverse this rejection. Contrary to the Examiner’s assertion, means claim 16 may not be interpreted as consisting of functional descriptive material *per se*. Applicants reiterate their previous assertion that **according to the section of the MPEP on Patentable Subject Matter Eligibility, MPEP 2106.II.C**, “Where means plus function language is used to define the characteristics of a machine or manufacture invention, such language **must** be interpreted to read on only the structures or materials disclosed in the specification and “equivalents thereof” that correspond to the recited function. Two *en banc* decisions of the Federal Circuit have made clear that the USPTO is to interpret means plus function language according to 35 U.S.C. § 112, sixth paragraph. *In re Donaldson*, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (en banc); *In re Alappat*, 33 F.3d 1526, 1540, 31 USPQ2d 1545, 1554 (Fed. Cir. 1994) (en banc).” The structures and materials disclosed in Applicants’ specification clearly include computer hardware [0015, 0021, 0032, 0036, 0037]. Therefore, the rejection of claim 16 is improper.

Section 103(a) Rejections:

The Office Action rejected claims 1, 3-6, 8-11 and 13-15 under 35 U.S.C. § 103(a) as being unpatentable over DeKoning, et al. (U.S. Patent 6,675,268) (hereinafter “DeKoning”) in view of Venkatesh, et al. (U.S. Patent 6,985,914) (hereinafter “Venkatesh”), claims 2, 7 and 12 as being unpatentable over DeKoning in view of Venkatesh and in view of McBrearty et al. (U.S. Publication 2004/0015585) (hereinafter “McBrearty”), claim 16 as being unpatentable over DeKoning in view of Venkatesh, in view of McBrearty and in view of Baker (U.S. Patent 6,965,993). Applicants respectfully traverse these rejections for at least the following reasons.

As a preliminary matter, the Office Action relies heavily on DeKoning, who teaches an array controller having exclusive ownership, for an exclusive period of time, of logical data volumes stored on a storage array, during which exclusive period of time the ownership cannot be transferred. Each logical data volume is controlled or owned by only one array controller at a time, and sole ownership of shared logical data volumes is transferred between the array controllers as necessary. To prevent ownership transfers from occurring too often, ownership of the logical data volumes is made exclusive, or "sticky," for a period of time after each transfer. During the exclusive ownership period of time, the ownership cannot be transferred. Only after expiration of the exclusive ownership period of time, and only then upon receipt of an access request from one of the host devices, can ownership of the affected logical data volume can be transferred. *See*, e.g., Abstract and column 4, lines 35-43.

Regarding claim 1, contrary to the Office Action assertion, DeKoning does not teach or suggest *a next scheduled time for exclusive access, when exclusive access to data is required by a task*. Instead, *only in response* to DeKoning’s array controller receiving ownership of a logical data volume does a "sticky period" of time begin, during which the logical data volume is said to be "sticky" to the owner array controller. DeKoning’s array controller maintains an exclusive lock on the logical data volume according to a timer that is set to time the period of exclusivity [column 7, lines 44-51]. The instant an array

controller establishes ownership of a logical data volume, “thereupon starts the exclusive period of time [column 4, lines 48-51].” The notion of scheduling a next time for exclusive access is absent from DeKoning. There is no suggestion whatsoever of a next scheduled time for exclusive access, when exclusive access to data is required by a task. Nor is there any suggestion of determining a maximum expiration time indicated by a next scheduled time for exclusive access.

Moreover, there is no mention in DeKoning of a task requiring exclusive access to data at a next scheduled time. Instead, DeKoning merely recites various host devices (array controllers) seeking exclusive control of shared ones of logical data volumes in real time. DeKoning teaches present ownership of and exclusive access to a logical data volume by a hardware device (array controller), not *future scheduled exclusive access* to data by a task, as recited in Applicant’s claim.

Neither does DeKoning teach or suggest the concept of a *token*, much less *tokens having expiration times*. DeKoning never suggests that the various requesting host devices have tokens. Instead, the various requesting host devices merely make their requests to access shared ones of logical data volumes in real time, without reference to tokens. DeKoning either transfers access control of a logical data volume, or not, depending on whether the logical data volume is currently under exclusive control, or not [column 1, lines 10-22; column 4, lines 43-52]. DeKoning does not specify that requesting host devices have *unexpired tokens*, as recited in claim 1. In light of the Office Action’s reliance on DeKoning to teach several limitations of claim 1 that recite an access token, it is baffling to read the Office Action’s own assertion, written on the first line of page 8, that “DeKoning does not explicitly teach dealing with an access token.”

DeKoning clearly does not teach or suggest that *the data access request from one client is for data that is also accessible by one or more other clients each having a corresponding unexpired token*. As established above, and as the Office Action admits in the first line of page 8, there are no access tokens in the description of DeKoning. Moreover, DeKoning teaches only one array controller at a time having control or

ownership of a logical data volume, and the instant an array controller establishes ownership of a logical data volume, “thereupon starts the exclusive period of time [column 4, lines 48-51].” DeKoning’s array controller maintains an exclusive lock on the logical data volume according to a timer that is set to time the period of exclusivity [column 7, lines 44-51]. In contrast, Applicant’s claim 1 recites that *the data access request from one client is for data that is also accessible by one or more other clients each having a corresponding unexpired token.*

Contrary to the Office Action assertion, DeKoning does not teach or suggest *generating an access token that grants the client access to data stored on one or more storage devices associated with the metadata server, wherein the access token comprises an expiration time.* As proven above, DeKoning does not teach access tokens. Each logical data volume in DeKoning is controlled or owned by only one array controller at a time, and the instant an array controller establishes ownership of a logical data volume, “thereupon starts the exclusive period of time [column 4, lines 48-51].” DeKoning’s array controller maintains an exclusive lock on a logical data volume according to a timer that is set to time the period of exclusivity [column 7, lines 44-51]. Nowhere is there the slightest suggestion of *generating an access token that grants the client access to data stored on one or more storage devices associated with the metadata server, wherein the access token comprises an expiration time.*

The foregoing remarks plainly show that DeKoning does not teach *wherein said generating an access token comprises setting the expiration time of the access token to be no later than the maximum expiration time indicated by the next scheduled time for exclusive access such that the access token will be expired during the next scheduled time for exclusive access, thus preventing the client from using the access token to access the data during the next scheduled time for exclusive access.* DeKoning’s devices do not present access tokens with expiration times, nor does DeKoning teach or suggest *a next scheduled time for exclusive access, when exclusive access to data is required by a task,* as shown above.

The Office Action apparently relies on Venkatesh to teach a metadata server, and seeks to modify Dawson's teachings to include a Venkatesh's metadata server. However, even if Dawson's logical data volumes were stored on a storage array for a meta file system, the resulting apparatus would fall far short of teaching the specific combination of limitations recited in claim 1, as is amply demonstrated in the foregoing remarks.

The Office Action rationale for combining Dawson with Venkatesh is far from clear. The Office Action seeks to justify the proposed combination on the basis that "Venkatesh's teachings would have allowed DeKoning's method to provide an efficient way of configuring exclusive rights of processing units in the network file server to the file systems stored in the network file server eliminate thrashing and unnecessary automatic volume transfer (col. 2, lines 15-17)."

In the paragraph quoted by the Office Action, Venkatesh states that "Although it is preferred to give a respective one of the processing units exclusive rights to each read/write file system for preventing data consistency problems, there could be a poor match between the number and size of the file systems stored in the network file server and the number of processing units that may be assigned exclusive access or management rights to the file systems [Venkatesh, column 2, lines 18-24]." Consequently, Venkatesh permits the file system cells to be accessed concurrently by multiple processors in a file server [Venkatesh, column 16, lines 8-9]. Venkatesh's technique is directed at permitting concurrent access by multiple processors in a file server where each file system cell is managed by a respective one of the processors [Venkatesh, Abstract]. Each of the several data mover computers has non-blocking concurrent read-write access to the information needed for directing a file system access received by any of the data movers to the file system cells containing files [Venkatesh, column 10, lines 24-26]. Venkatesh's cited configuration of "rights of processing units in the network file server to the file systems stored in the network file server" is aimed at matching the number and size of the file systems stored in the network file server with the number of processing units that may be assigned exclusive access or management rights to the file systems [Venkatesh,

column 2, lines 18-27]. In other words, this cited aspect of Venkatesh's technique amounts to load balancing [Venkatesh, column 16, lines 11-18].

DeKonig's method, on the other hand, is quite different. DeKonig aims to avoid repetitive ownership transfer between array controllers (thrashing) by granting exclusive ownership of a logical data volume to a particular array controller for a period of exclusivity [column 2, lines 34-36]. If, while one of DeKonig's array controllers has current exclusive ownership of a logical data volume, another array controller requests access to the same logical data volume, then an ownership transfer to the other array controller is denied, and the requesting host device may be denied access to the logical data volume [column 3, at least lines 8-14 and lines 60-61]. This is completely opposite to Venkatesh's method, which permits concurrent access by multiple processors.

Thus, the references teach away from their combination. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness.

The arguments presented above also apply to independent claims 6 and 11.

Regarding independent claim 16, contrary to the Office Action assertion, the cited art does not teach *setting the expiration time of an access token to the earlier of either a maximum expiration time indicated by a next scheduled time for exclusive access or the default expiration time, wherein the access token grants a client access to data stored on one or more storage devices associated with a metadata server, wherein said time for exclusive access is a time when exclusive access to the data is required by a task*. As shown above in regard to independent claims 1, 6, and 11, the Office Action reliance upon DeKoning to teach this aspect of Applicants' claims is in error.

The Office Action relies on the same rationale for combining Dawson and Venkatesh as asserted regarding independent claims 1, 6, and 11. As shown above in regard to independent claims 1, 6, and 11, the two references teach away from their combination.

The Office Action relies on McBrearty to teach determining a default expiration time and setting the expiration time of an access token to the earlier of either a maximum expiration time indicated by a next scheduled time for exclusive access or the default expiration time, as recited in claim 16. The Examiner refers to McBrearty, paragraph [0004] as teaching this aspect of Applicants' claim. However, the cited portion of McBrearty only teaches that in a typical system, a security token has a limited lifetime, typically 24 hours before the token expires and the user must re-apply for a new token. Nowhere does McBrearty mention determining a default expiration time, or a next scheduled time for exclusive access by a task, much less comparing the determined default expiration time and a maximum expiration time indicated by a next scheduled time for exclusive access.

The Office Action apparently proposes combining DeKoning and Venkatesh with McBrearty. However, the Office Action fails to offer any valid reason for attempting such a combination. The Office Action asserts "Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because McBrearty's teachings would have allowed Schmeidler's system and method for that allows for security tokens to be utilized which have more flexibility in a networked system (page 1, paragraph [0010])." This assertion has no bearing on the present discussion. Schmeidler is never even mentioned anywhere else in the Office Action.

Further regarding claim 16, an contrary to the Office Action assertion, the cited art does not teach *wherein the access token is set such that the access token will be expired during the next scheduled time for exclusive access, thus preventing the client from using the access token to access the data during the next scheduled time for*

exclusive access. The Office Action relies on Baker to teach this aspect of Applicants' claim 16, citing Baker at page 4, paragraph [0036]. However, there is no page 4, paragraph [0036] in the cited reference. Moreover, if Baker's token expires, the server simply closes the connection [Figure 5; column 7, lines 57-58; and column 8, lines 8-10]. There is absolutely no suggestion that *the access token is set such that the access token will be expired during the next scheduled time for exclusive access, thus preventing the client from using the access token to access the data during the next scheduled time for exclusive access*, as recited in Applicants' claim 16. None of the cited references teach this aspect of Applicants' claim 16.

Further regarding claim 16, the Office Action offers no valid reason for combining Baker with the other cited references. The Office Action simply asserts allowing "DeKoning's method to develop a better method for streaming video data." DeKoning is directed at managing redundant disk array controllers, namely at transferring control of logical data volumes located in storage arrays from one array controller to another array controller. The streaming of video data is irrelevant to DeKoning. Even if DeKoning's storage arrays streamed video data using Baker's tokens, the resulting apparatus would not have the specific combination of limitations recited in Applicants' claim 16, as proven above. The Office Action has failed to establish a *prima facie* case of obviousness.

Applicants also assert that numerous ones of the dependent claims recite further distinctions over the cited art. However, since the rejections have been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5760-19800/RCK.

Respectfully submitted,

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